

Calving: getting results without inducing

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Farmers are having more difficulty getting cows back in calf than they were 20 years ago so empty rates have increased. Compact calving is an issue with inductions becoming a standard management technique to help deal with this problem. But there are industry pressures to stop doing this and Anna Paton, a Lincoln postgraduate student, has been looking at how some farmers are achieving good reproductive results without inducing cows.

After completing a Bachelor of Commerce (Agriculture) degree, Anna undertook the Master of Applied Science degree specialising in farm management consultancy. She is now working for Landcorp based in Te Anau.

Anna's research into farming without inductions was supervised by Marv Pangborn and Keith Woodford and supported through the Education Committee of the South Island Dairy Event(SIDE), and also through a scholarship from Young Farmers Clubs. Anna also financed her studies by working as an AI technician.

Her starting point was to ask 11 vets and farm consultants working in Canterbury and North Otago to identify clients they believed were consistently achieving both an empty rate of less than 10 percent and a compact calving, despite not using induction as a management technique. The initial list included about 30 farmers.

Not all these farmers met her criteria so she selected eight farmers (with nine farms) who did, and who also had satisfactory records. She interviewed them in detail about their management systems. Apart from one farm that was milking once-a-day, all farms had 2004/05 production/cow that was higher than the district average. Seven of the farms achieved over 400 kilograms of milksolids (MS)/cow. All of the farms were producing more than 1200kg MS/ha. Four of the farms had breeding worth (BW) and production worth (PW) figures above the national median. One farm that had been selecting on pedigree rather than BW had a below average BW, but was still achieving 420kg MS/cow and 1450 kg MS/ha.

Seven herds were New Zealand genotype, and two were a mix of New Zealand and overseas genotypes. Three herds were predominantly Friesian, four were crossbred and two were Jersey.

Empty rates for the herds ranged from five to 12 percent in the 2003/04 season and from four to 12 percent in 2004/05. The lowest rate in each year was the once-a-day herd. Most of the empty rates were between seven and 10 percent. The highest rate of 12 percent was for a herd which was high in overseas genetics. However, this herd had had an empty rate of only seven and eight percent in the two previous years. Heifer empty rates ranged from 1.2 percent to 10 percent.

The midpoint of calving ranged from 13 to 14 days on three farms to about 23 days. The shortest period for 90 percent of the herd calved was the once-a-day herd at 41 days. The calving period on the other farms ranged from 43 to 56 days.

One of the problems with measuring empty rates was that there was no standard measurement system. Farmers pregnancy tested at different times, leading to some potential variability. But Anna was confident the figures produced were reliable estimates of cows culled for failing to get in-calf sufficiently quickly.

All of the farmers considered their current results to be acceptable. They said reproduction failure was not a major management issue.

The base data was interesting given the anecdotal stories about high empty rates being more of a problem with herds that are high producing, had high BW, and contained overseas genetics. The evidence Anna found confirmed clearly that it's possible to get good reproductive results with high producing and high BW cows, and to achieve this without induction. It also suggests that satisfactory results can be achieved with overseas genetics, although only two herds had an overseas genetic profile.

The big question then is whether or not there is something different about the management of these nine herds that is fundamental to their reproductive success. A major factor that stood out was cow management, but there was no single strategy by which this was achieved. Body condition score (BCS) and animal health were high priorities on all farms.

Use of minerals was widespread, reproductive tract disorders were minimal and treated regularly, and in only one herd was lameness identified as a problem. Bulk somatic cell count (SCC) levels ranged from 80,000 to 180,000, compared with a national average of 244,000. These levels are remarkable and probably reflect a high overall focus on cow management.

BSC was monitored closely and regularly on all nine farms. It was carried out regularly by consultants, usually monthly, on seven of the farms. Eight of the nine farms had records for BSC both at drying-off (4.6 to 5.0) and calving (5.0 to 5.2). All had their heifers at a BCS of 5.5 pre-calving. While not every farmer's BCS of 5.0 is exactly the same thing, given the close involvement of consultants in the process, researchers were confident these were genuine levels.

All farmers were feeding some silage during their cows' lactation, ranging from 228 to 600kg dry matter (DM)/cow. High energy supplements such as molasses, cereal grains or a high energy molasses by-product, were used on seven of the farms, mainly during the spring and at up to 2kg/day. On some farms higher energy supplement feeding continued throughout the lactation at about 600grams/day.

Winter feeding was controlled by the herd owner in all but one case, and in seven of the nine cases winter grazing was on an owned or leased runoff. Winter feed sources were of pasture, kale, rape and annual ryegrass, grass silage and/or straw. Winter intakes down the throat ranged from 12 to 15 kg DM/cow/day for older cows, and 11 to 15 kg DM/cow/day for younger cows. The higher intakes were reported for North Otago farms and for Friesian cows. These winter feeding levels are probably above average for the Canterbury and North Otago regions.

There was no silver bullet that led to the different results achieved on different farms. The farmers studied appeared to be placing a higher emphasis on cow management than on many farms, with particular emphasis on BCS prior to calving, and a general emphasis on animal health monitoring. The results, both in production and cow wastage, are a function of the total management package.

Table 1. Performance characteristics for nine non-induced herds, 2004/5

Herd	Cow Empty Rate (%)	Heifer Empty rate (%)	Mid point calving (days)	90% calved (days)	BCS drying off	BC calving	Main Breed ¹	MS/cow 2004/5	MS/ha 2004/5
1	9	1.2	23	56	-	5	NZ HF	360	1250
2	8	3.5	13-14	50	4.8	5	NZ CB	407	1600
3	10	1.8	17	48	4.8	5	NZ CB	417	1350
4	10	4	14	45-50	4.6-4.7	5	NZ CB	400	1350
5	7	4	14	45-50	4.6-4.7	5	NZ CB	400	1470
6	9.5	10	20-25	-	4.8	5	NZ HF	412	1180
7	9	7	13	43	-	-	NZ & OS J	420	1550
8	12	6	-	44	5	5.2	OS HF	500	1600
9 ²	4	5	21	41	5	5.2	NZ J	256	1206

1. HF = Holstein/Friesian, CB = crossbred, OS = overseas, J = Jersey

2. This farm was milking once-a day.